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Jones

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(54) **ROBOT OBSTACLE DETECTION SYSTEM**

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See application file for complete search history.

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(57) **ABSTRACT**

A robot obstacle detection system including a robot housing which navigates with respect to a surface and a sensor subsystem having a defined relationship with respect to the housing and aimed at the surface for detecting the surface. The sensor subsystem includes an optical emitter which emits a directed beam having a defined field of emission and a photon detector having a defined field of view which intersects the field of emission of the emitter at a region. A circuit in communication with a detector redirects the robot when the surface does not occupy the region to avoid obstacles. A similar system is employed to detect walls.

34 Claims, 20 Drawing Sheets